ISSN (print) 0093-4666 © 2012. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

http://dx.doi.org/10.5248/122.355

Volume 122, pp. 355–359 *October–December 2012*

Terriera angularis sp. nov. on *Illicium simonsii* from China

Feng Zhou[1], Xiao-Yan Wang[1], Lan Zhang[1] & Ying-Ren Lin[2*]

[1] *School of Life Science &* [2] *School of Forestry & Landscape Architecture, Anhui Agricultural University, West Changjiang Road 130, Hefei, Anhui 230036, China*

*Correspondence to: *yingrenlin@yahoo.com*

Abstract — *Terriera angularis*, a new species of *Terriera* that develops on leaves of *Illicium simonsii*, was collected from Shennongjia forestry region of Hubei Province, China. Description, illustration, and comments are given for this fungus. The type collection is deposited in the Reference Collection of Forest Fungi of Anhui Agricultural University, China (AAUF).

Key words — *Rhytismatales*, morphological character, taxonomy

Introduction

Eriksson (1970) erected the segregate monotypic genus *Terriera* B. Erikss. for the type species *T. cladophila* (Lév.) B. Erikss. (syn. *Hysterium cladophilum* Lév.), which develops on twigs of *Vaccinium myrtillus* L. Johnston (2001), who monographed the monocotyledon-inhabiting *Lophodermium* species, divided *Lophodermium* into five groups, equating group B with *Terriera* because its morphology was closer to *T. cladophila* than to the type species of *Lophodermium*. Of the 24 species included in *Terriera* (MycoBank, www.mycobank.org/), seven have been reported from China: *T. camelliae*, *T. coacervata*, *T. huangshanensis*, *T. illiciicola*, *T. petrakii*, *T. rotundata*, and *T. simplex* (Chen et al. 2012, Gao et al. 2012, Song et al. 2012, Yang et al. 2011, Zheng et al. 2012).

Recently, during investigations of the *Rhytismatales* from Shennongjia forestry region of Hubei Province, China, a new *Terriera* species was discovered.

Materials & methods

Mature and immature ascomata were selected from the collected specimen. Macroscopic features were observed under a hand lens and stereoscope. Reference collection material was rehydrated in water for 15 min, and 10–15 µm thick fruitbody sections were cut by a freezing microtome (YD-1508-III, China). For observing ascomatal

outlines in vertical section, sections were mounted in lactic acid or cotton blue with pretreatment in water. The colors of the various structures and ascospore contents were observed in water. Gelatinous sheaths surrounding ascospores and paraphyses were examined in water or 0.1% (w/v) cotton blue in lactic acid. Measurements were made from material mounted in 5% KOH or Melzer's reagent and from 30 asci, ascospores, and paraphyses for each specimen. Line and point integrated illustrations of external shapes and internal structures of fruit bodies were drawn using a microscopic drawing tube (Panasoianic XSJ-2, Japan).

Taxonomy

Terriera angularis Y.R. Lin, F. Zhou & Xiao Y. Wang, **sp. nov.** Figs 1–5

MycoBank MB800350

Differs from *Terriera minor* by its triangular to quadrangular, rarely elliptical, mature ascomata, and its narrower ascospores not quite tapering to both ends.

Type: China, Hubei, Shennongjia forestry region, Guanmenshan, alt. ca 1300 m, on leaves of *Illicium simonsii* Maxim. (*Schisandraceae*), 9 July 2010, G.J. Jia & Y.R. Lin 2511 (**Holotype**, AAUF 68619).

Etymology: *angularis* (Latin) = angular, referring to the external shape of the ascomata.

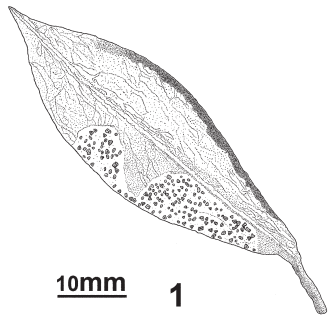
Colonies only hypophyllous, forming irregular, large bleached spots each with an obvious edge.

Zone lines absent.

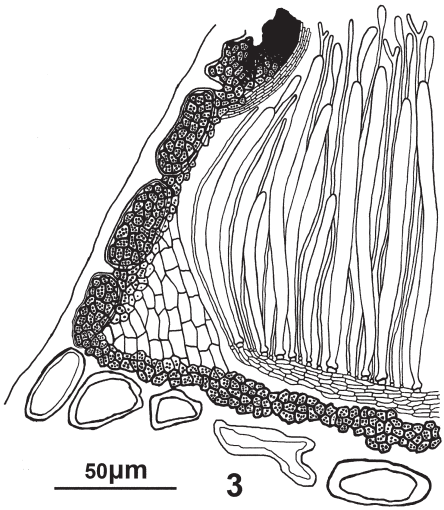
Conidiomata not observed.

Ascomata hypophyllous, clustered, sometimes confluent in groups of two or three. In surface view, ascomata triangular to quadrangular, rarely elliptical, diameter or length 350–720 µm, the edge defined, grey-black to black except sometimes for a paler region at ends, with conspicuously black perimeter line, shiny, moderately raised above the surface of the substratum, opening by 3–4 radial splits or a longitudinal split. Young ascomata almost concolorous with substratum surface, with dark brown perimeter line, usually rotund or elliptical, preformed opening mechanism often appearing as a longitudinally hollow zone. In median vertical section, ascomata subepidermal with epidermal cells becoming filled with fungal tissue as ascoma develops. Lips not observed. Covering stroma 22–30 µm thick, connecting to the basal stroma, consisting of dark brown textura angularis with thick-walled cells 3–6 µm diam. A short, ca 12 µm thick extension, comprised of strongly black and brittle tissue with no obvious cellular structure, adjacent to the top of the covering stroma. Excipulum very poorly developed, arising from the inner layer of the covering stroma. Basal stroma slightly concave, 10–22 µm thick, dark brown, composed of 2–4 rows of 3.5–7 µm diam., angular, thick-walled cells. Colorless to light grey-brown textura prismatica 35–45 µm thick existing between the covering and basal stromata. Subhymenium 12–20 µm thick, consisting of

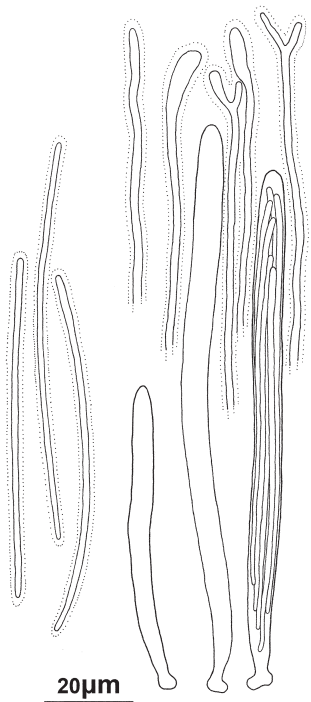
1mm 2



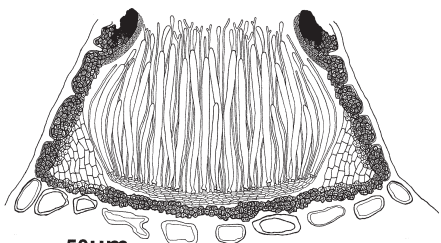
10mm 1



50µm 3



20µm 5



50µm 4

Figs 1–5. *Terriera angularis* on *Illicium simonsii*. 1. Habit on leaf. 2. Detail of ascomata, immature ascomata (top left). 3. Portion of ascoma in median vertical section. 4. Ascoma in median vertical section. 5. Paraphyses, asci and ascospores.

textura angularis-porrecta. Paraphyses filiform, 1.8–2 µm wide, aseptate, gradually or suddenly swollen to 4 µm or branching once at the apex, covered with a ca 1 µm thick mucous coating. Asci maturing sequentially, cylindrical, the apex round or slightly acute, 105–130 × 5.5–6.5 µm, thin-walled, J–, 8-spored, with spores arranged in a fascicle. Ascospores filiform, 70–90 × 1–1.2 µm, hyaline, aseptate, not quite tapering to the round base, enveloped in a 0.8–1 µm thick gelatinous sheath.

Ecology & distribution: Ascomata on fallen leaves of *Illicium simonsii*. Known only from the type locality, Hubei, China.

Comments—*Terriera angularis* is very similar to *T. minor* (Tehon) P.R. Johnst. in the way ascomata are embedded and in ascal shape and size. However, *T. minor* produces oblong to oblong-elliptic ascomata with a black flattened area lining both sides of the single longitudinal slit-like opening, wider ascospores (1.5–2 µm) tapering slightly to both ends, paraphyses branching 2–3 times in upper 30–40 µm, and a faint to well-developed paler zone along the future line of the immature ascoma opening (Johnston 1988, 1989a, b).

Terriera cladophila is easily distinguished from the new species by its subcuticular circular to elliptical ascomata, subhymenium consisting of textura angularis and textura intricata, wider asci (6–9 µm), and brown diffuse zone lines (Minter 1996).

Acknowledgments

We are grateful to Dr D.W. Minter and Dr M. Ye for invaluable suggestions and critically reviewing the manuscript, to Mr G.J. Jia for the field investigations. This study was supported by the National Natural Science Foundation of China (No. 31270065, 31170019), and the Specialized Research Fund for the Doctoral Program of Higher Education of China (No. 20070364002).

Literature cited

Chen JL, Lin YR, Hou CL, Wang SJ. 2012 ["2011"]. Species of *Rhytismataceae* on *Camellia* spp. from the Chinese mainland. Mycotaxon 118: 219–230. http://dx.doi.org/10.5248/118.219

Eriksson B. 1970. On *Ascomycetes* on *Diapensales* and *Ericales* in Fennoscandia. 1. *Discomycetes*. Symb. Bot. Upsal. 19(4): 1–71.

Gao XM, Zheng CT, Lin YR. 2012. *Terriera simplex*, a new species of *Rhytismatales* from China. Mycotaxon 120: 209–213.

Johnston PR. 1988. An undescribed pattern of ascocarp development in some non-coniferous *Lophodermium* species. Mycotaxon 31: 383–394.

Johnston PR. 1989a. *Lophodermium* (*Rhytismataceae*) on *Clusia*. Sydowia 41: 170–179.

Johnston PR. 1989b. *Rhytismataceae* in New Zealand 2. The genus *Lophodermium* on indigenous plants. New Zealand J. Bot. 27: 243–274.

Johnston PR. 2001. Monograph of the monocotyledon-inhabiting species of *Lophodermium*. Mycol. Pap. 176: 1–239.

Minter DW. 1996. *Terriera cladophila*. IMI Descr. Fungi & Bact. no. 1296.

Song JF, Liu L, Li YY, Hou, CL. 2012. Two new species of *Terriera* from Yunnan Province, China. Mycotaxon 119: 329–335. http://dx.doi.org/10.5248/119.329

Yang ZZ, Lin YR, Hou CL. 2011. A new species of *Terriera* (*Rhytismatales*, *Ascomycota*) from China. Mycotaxon 117: 367–371. http://dx.doi.org/10.5248/117.367

Zheng Q, Lin YR, Yu SM, Chen L. 2012 ["2011"]. Species of *Rhytismataceae* on *Lithocarpus* spp. from Mt Huangshan, China. Mycotaxon 118: 311–323. http://dx.doi.org/10.5248/118.311